ALBUMINAR-20 - albumin human solution
CSL Behring LLC

R_x only

DESCRIPTION

Albuminar®-20, Albumin (Human) 20% is a sterile aqueous solution of albumin obtained from large pools of adult human venous plasma by low temperature controlled fractionation according to the Cohn process. It is stabilized with 0.016 M sodium acetyltryptophanate and 0.016 M sodium caprylate and heated at 60°C for 10 hours.
All Source Plasma used in the manufacture of this product was tested by FDA-licensed Nucleic Acid Tests (NAT) for HCV and HIV-1 and found to be nonreactive (negative).
An investigational NAT for HBV was also performed on all Source Plasma used in the manufacture of this product and found to be nonreactive (negative). The aim of the HBV test is to detect low levels of viral material, however, the significance of a nonreactive (negative) result has not been established.

Albuminar®-20 is a solution containing in each 100 mL 20 grams of human albumin, osmotically equivalent to 400 mL of normal human plasma. The pH of the solution is adjusted with sodium bicarbonate, sodium hydroxide, or acetic acid. Approximate concentrations of significant electrolytes per liter are: sodium 130-160 mEq; and potassium-n.m.t. 1 mEq. The solution contains no preservative. This product has been prepared in accordance with the requirements established by the Food and Drug Administration and is in compliance with the standards of the United States Pharmacopeia. Albuminar®-20 is to be administered by the intravenous route.

The heat treatment step employed in the manufacture of Albuminar®-20, pasteurization of the final container at 60°C for 10 hours, has been validated in a series of *in vitro* experiments for its capacity to inactivate Human Immunodeficiency Virus type 1 (HIV-1), and the following model viruses: Bovine Viral Diarrhea Virus (BVDV - an enveloped virus used as a model for hepatitis C virus), Pseudorabies (PrV - a large, enveloped virus), and Encephalomyocarditis Virus (EMC - a small non-enveloped virus). For each virus studied, three independent experiments were conducted using Albuminar®-5, Albumin (Human) 5% and Albuminar®-25, Albumin (Human) 25% with the following results. [1]
Pasteurization (60°C for 10 hours) Viral Reduction Studies (log_{10} reduction)

Virus	Albuminar®-5, Albumin (Human) 5%
HIV-1	>5.44, >6.38 and >6.31
BVDV	>6.01, >6.76 and >6.55
PrV	>7.30, >7.68 and >7.63
EMC	>7.38, >7.97 and >7.97
Virus	Albuminar®-25, Albumin (Human) 25%
HIV-1	>5.50, >6.57 and >6.64
BVDV	>5.99, >5.81 and >5.32
PrV	>7.32, >7.20 and >7.42
EMC	>7.10, >7.89 and >7.87

CLINICAL PHARMACOLOGY

Albuminar®-20 is active osmotically and is therefore important in regulating the volume of circulating blood. When injected intravenously, 50 mL of 20% albumin draws approximately 140 mL of additional fluid into the circulation within 15 minutes, except in the presence of marked dehydration. This extra fluid reduces hemoconcentration and blood viscosity. The degree of volume expansion is dependent on the initial blood volume. When the circulating blood volume has been depleted, the hemodilution following albumin administration persists for many hours. In individuals with normal blood volume, it usually lasts only a few hours.
Albumin (Human), unlike whole blood or plasma, is considered free of the danger of viral hepatitis because it is heated at 60°C for 10 hours. Albuminar®-20 may be given in conjunction with other parenteral fluids such as saline, dextrose or sodium lactate. It is convenient to use since no cross-matching is required and the absence of cellular elements removes the danger of sensitization with repeated infusions.

INDICATIONS AND USAGE

SHOCK

Albuminar®-20 is indicated in the emergency treatment of shock due to burns, trauma, operations and infections, in the treatment of injuries of such severity that shock, although not immediately present, is likely to ensue and in other similar conditions where the

restoration of blood volume is urgent. If there has been considerable loss of red blood cells, transfusion with packed red blood cells is indicated.

BURNS

Albuminar®-20 is indicated in conjunction with adequate infusions of crystalloid to counteract hemoconcentration and the loss of protein, electrolytes and water that usually follow severe burns. Because of changes in permeability, little administered albumin is likely to be retained intravascularly in the first 12 hours after a major burn. However, an optimum regimen for the use of colloid, electrolytes and water in the treatment of burns has not been established.

HYPOPROTEINEMIA

Albuminar®-20 may be used in acutely hypoproteinemic patients in the presence or absence of edema.

CONTRAINDICATIONS

Albuminar®-20 is contraindicated in patients with severe anemia or cardiac failure and in patients with a history of allergic reactions to human albumin.

WARNINGS

Infusion of protein-containing solutions such as Albuminar®-20 that have been excessively or inappropriately diluted with hypotonic solutions such as sterile water for injection may result in severe hemolysis and acute renal failure. Please refer to the **DOSAGE AND ADMINISTRATION** section for information about the recommended diluents for Albuminar®-20, which are normal saline and 5% dextrose.

Do not use if the solution is turbid. Since this product contains no antimicrobial preservative, do not begin administration more than 4 hours after the container has been entered.

Albuminar®-20 is made from human plasma. Products made from human plasma may contain infectious agents such as viruses, that can cause disease. The risk that such products will transmit an infectious agent has been reduced by screening plasma donors for prior exposure to certain viruses, by testing for the presence of certain current virus infections, and by inactivating and/or removing certain viruses during manufacture. The manufacturing procedure for Albuminar®-20 includes processing steps designed to reduce further the risk of viral transmission. Stringent procedures utilized at plasma collection centers, plasma testing laboratories, and fractionation facilities are designed to reduce the risk of viral transmission. Albuminar®-20 is pasteurized in the final container at 60.0 +/- 0.5°C for 10-11 hours. Virus elimination/inactivation is also achieved by the cold alcohol fractionation process. (See **DESCRIPTION** section for further information on viral reduction measures.) Despite these measures, such products may still potentially contain human pathogenic agents, including those not yet known or identified. Thus the risk of transmission of infectious agents cannot be totally eliminated. Any infections thought by a physician possibly to have been transmitted by this product should be reported by the physician or other healthcare provider to CSL Behring at 800-504-5434. The physician should discuss the risks and benefits of this product with the patient.

Albumin is a derivative of human blood. Based on effective donor screening and product manufacturing processes, it carries an extremely remote risk for transmission of viral diseases. A theoretical risk for transmission of Creutzfeldt-Jakob disease (CJD) also is considered extremely remote. No cases of transmission of viral diseases or CJD have ever been identified for albumin.

PRECAUTIONS

GENERAL

If dehydration is present additional fluids must accompany or follow the administration of albumin. Administration of large quantities of albumin should be supplemented with red blood cells or replaced by whole blood to combat the relative anemia which would follow such use. The quick response of blood pressure which may follow the rapid administration of concentrated albumin necessitates careful observation of the injured patient to detect bleeding points which failed to bleed at lower blood pressure. Albumin (Human) 20% should be administered with caution to patients with low cardiac reserve or with no albumin deficiency because a rapid increase in plasma volume may cause circulatory embarrassment (e.g. hypertension, hypotension, or pulmonary edema). In cases of hypertension, a slower rate of administration is desired - 200 mL of albumin solution may be mixed with 200 mL of 10% dextrose solution and administered at a rate of 10 grams of albumin (100 mL) per hour.

If anaphylactic or severe anaphylactoid reactions occur, discontinue infusion immediately. Infusion rates and the patient's clinical state should be monitored closely during infusion.

INFORMATION FOR PATIENT

Some viruses, such as parvovirus B19 or hepatitis A are particularly difficult to remove or inactivate at this time. Parvovirus B19 may most seriously affect pregnant women, or immune-compromised individuals. The majority of parvovirus B19 and hepatitis A infections are acquired by environmental (community acquired) sources.

PREGNANCY CATEGORY C

Animal reproduction studies have not been conducted with Albuminar®-20. It is also not known whether Albuminar®-20 can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Albuminar®-20 should be given to a pregnant woman only if clearly needed.

PEDIATRIC USE

No clinical studies using Albuminar®-20 have been conducted in pediatric patients. Safety and effectiveness in pediatric patients have not been established. However, extensive experience in patients suggests that children respond to Albuminar®-20 in the same manner as adults.

ADVERSE REACTIONS

The incidence of untoward reactions to Albuminar®-20 is low. Reports have been received of anaphylaxis, which may be severe, and hypersensitivity reactions (including urticaria, skin rash, pruritus, edema, erythema, hypotension and bronchospasm). Nausea, vomiting, increased salivation, chills and febrile reactions have also been reported (see also **PRECAUTIONS**).

DOSAGE AND ADMINISTRATION

Albuminar®-20 may be given intravenously without dilution or it may be diluted with normal saline or 5% dextrose before administration. 250 mL per liter gives a solution which is approximately isotonic and iso-osmotic with citrated plasma.
When undiluted albumin solution is administered in patients with normal blood volume, the rate of infusion should be slow enough to prevent too rapid expansion of plasma volume.
In the treatment of shock, an initial dose of 100 mL of the 20% albumin solution is given as rapidly as tolerated. If response within 30 minutes is inadequate, an additional 100 mL of 20% albumin solution may be given. Therapy should be guided by the clinical response, blood pressure and an assessment of relative anemia. If more than 250 mL are given, or if hemorrhage has occurred, the administration of packed red blood cells may be desirable.
In severe burns, immediate therapy should include large volumes of crystalloid with lesser amounts of 20% albumin solution to maintain an adequate plasma volume and protein content. After the first 24 hours, the ratio of albumin to crystalloid may be increased to establish and maintain a plasma albumin level of about 2.5 g/100 mL or a total serum protein level of about 5.2 g/100 mL.
The infusion of Albumin (Human) as a nutrient in the treatment of chronic hypoproteinemia is not recommended. In acute hypoproteinemia 250-350 mL of 20% albumin may be required to reduce edema and to bring serum protein values to normal. Since such patients usually have approximately normal blood volume, the rate of administration should not be greater than 3 mL per minute to avoid circulatory embarrassment.
Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration, whenever solution and container permit.

HOW SUPPLIED

Albuminar®-20 is supplied as a 20% solution in:
50 mL vials containing 10 grams of albumin (NDC 0053-7695-33)
100 mL vials containing 20 grams of albumin (NDC 0053-7695-34)
Store between 20-25°C (68-77°F); excursions permitted to 15-30°C (59-86°F) [See USP Controlled Room Temperature].

REFERENCES

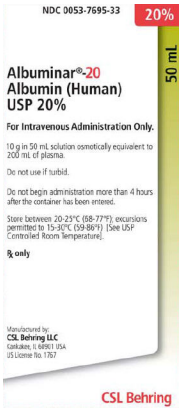
1. Data on file.

BIBLIOGRAPHY

Finlayson, J.S.: Albumin Products. *Seminars in Thrombosis and Hemostasis* 6:85-120, 1980.
Tullis, J.L.: Albumin. *JAMA* 237: 355-360 and 460-463, 1977.
Rudolf, A.M.: Pediatrics. 18th ED., p. 1839, Appleton and Lange, 1987.
Manufactured by:
CSL Behring LLC
Kankakee, IL 60901 USA
Revised May, 2008
12480-04

PACKAGE LABEL - PRINCIPAL DISPLAY PANEL - 50 ML CARTON
NDC 0053-7695-33
20%
50 mL
Albuminar®-20
Albumin (Human)

USP 20%
For Intravenous Administration Only.
10 g in 50 mL solution osmotically equivalent to 200 mL of plasma.
Do not use if turbid.
Do not begin administration more than 4 hours after the container has been entered.
Store between 20-25°C (68-77°F); excursions permitted to 15-30°C (59-86°F) [See USP Controlled Room Temperature].
R_X only
Manufactured by:
CSL Behring LLC
Kankakee, IL 60901 USA
US License No. 1767
CSL Behring



PACKAGE LABEL - PRINCIPAL DISPLAY PANEL - 100 ML CARTON
NDC 0053-7695-34
20%
100 mL
Albuminar®-20
Albumin (Human)
USP 20%
For Intravenous Administration Only.
20 g in 100 mL solution osmotically equivalent to 400 mL of plasma.
Do not use if turbid
Do not begin administration more than 4 hours after the container has been entered.
Store between 20-25°C (68-77°F); excursions permitted to 15-30°C (59-86°F) [See USP Controlled Room Temperature].
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